

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (presently amended) An electrochemical cell, comprising:

a first electrode and a second electrode with a membrane disposed therebetween and in ionic communication with the first electrode and the second electrode; and

a sintered porous support member disposed on a side of, and in fluid communication with, the membrane opposite the second electrode, wherein the support member comprises a first portion on first side of the support member proximate the membrane and a second portion disposed on a side of the first portion opposite the membrane and adjacent to said first portion, wherein the second portion has a second portion porosity different from a first portion porosity.
2. (original) The electrochemical cell of Claim 1, wherein the second portion porosity is greater than the first portion porosity.
3. (original) The electrochemical cell of Claim 2, wherein the first portion porosity is less than or equal to about 60%.

4. (original) The electrochemical cell of Claim 3, wherein the first portion porosity is about 35% to about 50%.
5. (original) The electrochemical cell of Claim 2, wherein the second portion porosity is greater than or equal to about 50%.
6. (original) The electrochemical cell of Claim 5, wherein the second portion porosity is about 50% to about 70%.
7. (original) The electrochemical cell of Claim 1, wherein the support member comprises a third portion disposed on a side of the second portion opposite the first portion, wherein the third portion has a third portion porosity that is less than or equal to the second portion porosity.
8. (original) The electrochemical cell of Claim 1, wherein the support member comprises a plurality of layers, wherein each layer has a layer porosity of greater than or equal to a previous layer.
9. (original) The electrochemical cell of Claim 1, wherein the support member is a single layer comprising a decreasing porosity gradient from the first side toward a second side disposed opposite the first side.
10. (original) The electrochemical cell of Claim 1, wherein the support member further comprises a second side comprising a channel.

11. (original) The electrochemical cell of Claim 10, wherein the channel extends from an inlet disposed proximate an edge of the side to a terminus disposed proximate a geometric center of the side.

12. (original) The electrochemical cell of Claim 10, wherein the channel extends from an inlet disposed proximate an edge of the side to an outlet disposed proximate the same or a different edge of the side.

13. (original) The electrochemical cell of Claim 1, wherein the second portion comprises higher porosity regions and lower porosity regions.

14. (original) The electrochemical cell of Claim 1, further comprising a pressure pad disposed in physical and electrical communication with the support member.

15. (original) The electrochemical cell of Claim 1, further comprising an additional sintered porous support member disposed on a side of the membrane opposite the support member.

16. (original) The electrochemical cell of Claim 15, wherein the additional support member comprises the second electrode.

17. (original) The electrochemical cell of Claim 15, wherein the additional support member further comprises a first additional portion on first side of the additional support member proximate the membrane and a second additional portion disposed on a side of the first additional portion opposite the membrane, wherein the second additional

portion has a second additional portion porosity different from a first additional portion porosity.

18. (original) The electrochemical cell of Claim 17, wherein the second additional portion porosity is greater than the first additional portion porosity.

19. (original) The electrochemical cell of Claim 1, wherein the support member further comprises the first electrode.

20. (presently amended) An electrochemical cell, comprising:

a first electrode and a second electrode with a membrane disposed therebetween and in ionic communication with the first electrode and the second electrode;

a flow field consisting essentially of a sintered porous support member disposed in electrical and physical communication with the first electrode, wherein the support member further comprises a first portion adjacent the membrane and a second portion on a side of the first portion opposite the membrane, and wherein the second portion has a second portion porosity different from a first portion porosity; and

a pressure assembly disposed in physical and electrical communication with the flow field.

21. (cancelled)

22. (original) The electrochemical cell of Claim 20, wherein the second portion porosity is greater than the first portion porosity.

23. (original) The electrochemical cell of Claim 20, wherein the support member further comprises the first electrode.

24. (original) The electrochemical cell of Claim 20, wherein the support member is configured to support the membrane at pressures of greater than or equal to about 100 psi.

25. (original) The electrochemical cell of Claim 24, wherein the pressures are greater than or equal to 500 psi.

26. (original) The electrochemical cell of Claim 20, wherein the porous support member comprises a channel.

27. (original) The electrochemical cell of Claim 20, wherein the pressure pad assembly is a pressure pad.

30. (previously presented) The electrochemical cell of Claim 1, wherein [[the]] a channel is disposed between the first portion and the second portion.

31. (previously presented) The electrochemical cell of Claim 1, wherein the first portion is a first layer and the second portion is a second layer.

32. (presently amended) The electrochemical cell of Claim 20 [[21]], wherein

the first portion is a first layer and the second portion is a second layer.

REMARKS / ARGUMENTS

Status of Claims

Claims 1-27 and 30-32 are pending in the application. Claims 1-27 and 30-32 stand rejected. By this Amendment, Claims 1, 20 and 32 have been amended, and Claim 21 has been canceled, leaving Claims 1-20, 22-27 and 30-32 for consideration. The Examiner objected to the drawings because they include reference characters not mentioned in the description. Applicant has submitted replacement drawings and has amended the specification for consideration upon entry of the present Amendment.

By this amendment, Claims 1, 20 and 32 have been amended. No new matter has been added by these amendments as antecedent support may be found in the specification as originally filed, such as at Paragraph [0051] and Figure 3 for example.

Applicant would like to bring to the Examiner's attention a petition for approval of a delayed claim to priority that was filed by the Applicant on December 28, 2007 along with a three-month petition for extension of time.

Applicant respectfully submits that the rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Objections to drawings

The examiner objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference characters not mentioned in the description: "118", "120" and "122" from Figure 10. The Examiner required replacement drawing sheets in compliance with 37 CFR 1.121(d) or amendment to the specification to add the reference characters in compliance with 37 CFR 1.121(b).